

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer system for protecting electronic documents, comprising:
 - a repository for storing an electronic document having a document attribute;
 - an access layer operable to control access to the electronic document, wherein the access layer is used by an accessor to access at least one portion of the electronic document, the accessor having an accessor attribute;
 - a rule set; and
 - an expert system, wherein the expert system provides authorization information to the access layer in response to a request, and wherein the expert system is operable to determine the authorization information comprising an access behavior with regards to the at least one portion, and wherein the expert system determines access behavior by evaluating rules of the rule set with reference to at least the document attribute and the accessor attribute when the accessor tries to access the at least one portion using the access layer.

2. (Original) The computer system of claim 1, where the rule set is stored in a knowledge base and the access behavior is defined in the knowledge base.
3. (Original) The computer system of claim 1, where the expert system returns the access behavior to the access layer to control the access of the accessor.
4. (Original) The computer system of claim 1, where the rule set has a rule that uses the accessor attribute and the document attribute to assert a condition on the basis of a value of the accessor attribute and a value of the document attribute.
5. (Original) The computer system of claim 1, where the access layer learns about the document attribute of the document by using a generic interface.
6. (Original) The computer system of claim 5, where the expert system retrieves structure meta data of the document that describes the structure of the document.
7. (Original) The computer system of claim 6, where the structure meta data indicates that the at least one portion is an inner subportion of an outer portion of the document and the access layer allows the accessor to access the inner subportion but prevents the accessor from accessing the outer portion.
8. (Original) The computer system of claim 6, where the structure meta data has at least one structure element that is associated with a key that influences the access behavior for the at least one structure element.
9. (Original) The computer system of claim 1, where a framework generates a runtime representation of the document that references the document and reflects the access behavior with respect to the accessor.

10. (Original) The computer system of claim 1, where at least one of:
- the document attribute comprises at least one of document type, document structure information, document meta data, document relationship information, and document access behavior;
 - the accessor attribute comprises at least one of user role, user group, process type, and application type;
 - the access behavior comprises at least one of hidden, protected, read, modify, delete, create, print, copy, transport, archive, and custom access behavior; and
 - the accessor comprises at least one of user, application, and process.
11. (Original) The computer system of claim 1, where a change of the rule set affects substantially simultaneously the access behavior to the at least one portion without the need to change the document or the accessor.

12. (Currently Amended) A method for controlling access to electronic documents, comprising:

receiving a request ~~of~~ from an accessor to access at least one portion of an electronic document stored in a repository, with the electronic document having a document attribute and the accessor having an accessor attribute;

requesting authorization information from an expert system with regards to the authorization of the accessor to the at least one portion in response to receiving the request;

receiving from the expert system the authorization information including an access behavior with regards to the at least one portion, where the access behavior is determined by applying rules of a rule set to data comprising at least the document attribute and the accessor attribute; and

granting the accessor access to the at least one portion according to the access behavior.

13. (Original) The method of claim 12, where the access behavior is defined in a knowledge base and the rule set is stored in the knowledge base.

14. (Original) The method of claim 12, where the rule set has a rule that uses the accessor attribute and the document attribute to assert a condition on the basis of a value of the accessor attribute and a value of the document attribute.

15. (Original) The method of claim 12, further comprising:

generating a runtime representation of the document that references the document and reflects the access behavior with respect to the accessor.

16. (Original) The method of claim 15, further comprising:
receiving an event from at least one of the document and the runtime representation,
where the event is triggered by a change of the document;
causing the expert system to determine an updated access behavior in accordance with
the change; and
notifying at least one of the document and the runtime representation about the updated
access behavior.
17. (Original) The method of claim 12, further comprising:
retrieving structure meta data of the document that describes the structure of the
document.
18. (Original) The method of claim 17, where the structure meta data indicates that the at
least one portion is an inner sub-portion of an outer portion of the document, and where the
granting the accessor access further comprises:
allowing the accessor to access the inner sub-portion; and
preventing the accessor from accessing the outer portion.
19. (Original) The method of claim 12, where the access behavior comprises at least one of
hidden, protected, read, modify, delete, create, print, copy, transport, archive, and custom access
behavior.
20. (Original) The method of claim 12, further comprising:
changing the rule set and affecting substantially simultaneously the access behavior to the
at least one portion without the need to change the document or the accessor.

21. (Currently Amended) A computer program product, tangibly embodied on an information carrier, comprising instructions operable to cause data processing apparatus to:

receive a request ~~of~~ from an accessor to access at least one portion of an electronic document stored in a repository, with the electronic document having a document attribute and the accessor having an accessor attribute;

request authorization information from an expert system with regards to the authorization of the accessor to the at least one portion in response to receiving the request;

receive from the expert system the authorization information including an access behavior with regards to the at least one portion, where the access behavior is determined by applying rules of a rule set to data comprising at least the document attribute and the accessor attribute; and

grant the accessor access to the at least one portion according to the access behavior.

22. (Original) The product of claim 21, where access to the at least one portion of the electronic document is provided only through an access layer comprising the instructions to receive a request, request authorization, receive from the expert system authorization information, and grant the accessor access.

23. (Original) The product of claim 21, where the access behavior is defined in a knowledge base and the rule set is stored in the knowledge base.

24. (Original) The product of claim 21, where the rule set has a rule that uses the accessor attribute and the document attribute to assert a condition on the basis of a value of the accessor attribute and a value of the document attribute.

25. (Original) The product of claim 21, further comprising instructions to:

generate a runtime representation of the document that references the document and reflects the access behavior with respect to the accessor.

26. (Original) The product of claim 25, further comprising instructions to:
receive an event from at least one of the document and the runtime representation, where the event is triggered by a change of the document;
cause the expert system to determine an updated access behavior in accordance with the change; and
notify at least one of the document and the runtime representation about the updated access behavior.
27. (Original) The product of claim 21, further comprising instructions to:
retrieve structure meta data of the document that describes the structure of the document.
28. (Original) The product of claim 27, where the structure meta data indicates that the at least one portion is an inner sub-portion of an outer portion of the document, and where the granting the accessor access further comprises:
allowing the accessor to access the inner sub-portion; and
preventing the accessor from accessing the outer portion.
29. (Original) The product of claim 21, where the access behavior comprises at least one of hidden, protected, read, modify, delete, create, print, copy, transport, archive, and custom access behavior.
30. (Original) The product of claim 21, further comprising instructions to:
change the rule set and affecting substantially simultaneously the access behavior to the at least one portion without the need to change the document or the accessor.